

Abstract

Method and Composition for Nutritional  
Supplementation During Exercise and Recovery

5 A supplement containing lactic acid salts and/or  
polymers, and optionally simple and/or complex  
carbohydrates, is employed to promote energy supply,  
fluid and electrolyte balance, blood glucose  
homeostasis, blood pH buffering and muscle as well as  
liver glycogen storage during and after strenuous  
10 exercise. The disclosed composition takes advantage of  
the presence of sodium-mediated intestinal lactate and  
glucose transporters, intestinal conversion of glucose  
to lactate, hepatic formation of glycogen from lactate,  
the preferential uptake of lactate for fuel by cardiac  
15 and red skeletal muscles, the alkalizing effect of the  
combustion of lactate to  $\text{CO}_2$  and  $\text{H}_2\text{O}$  and conversion to  
glucose of glycogen, and the presence of a sarcolemmal  
(muscle cell membrane) lactate/hydrogen ion (symport)  
transport protein to provide beneficial nutritional  
20 supplementation during exercise and subsequent  
recovery.